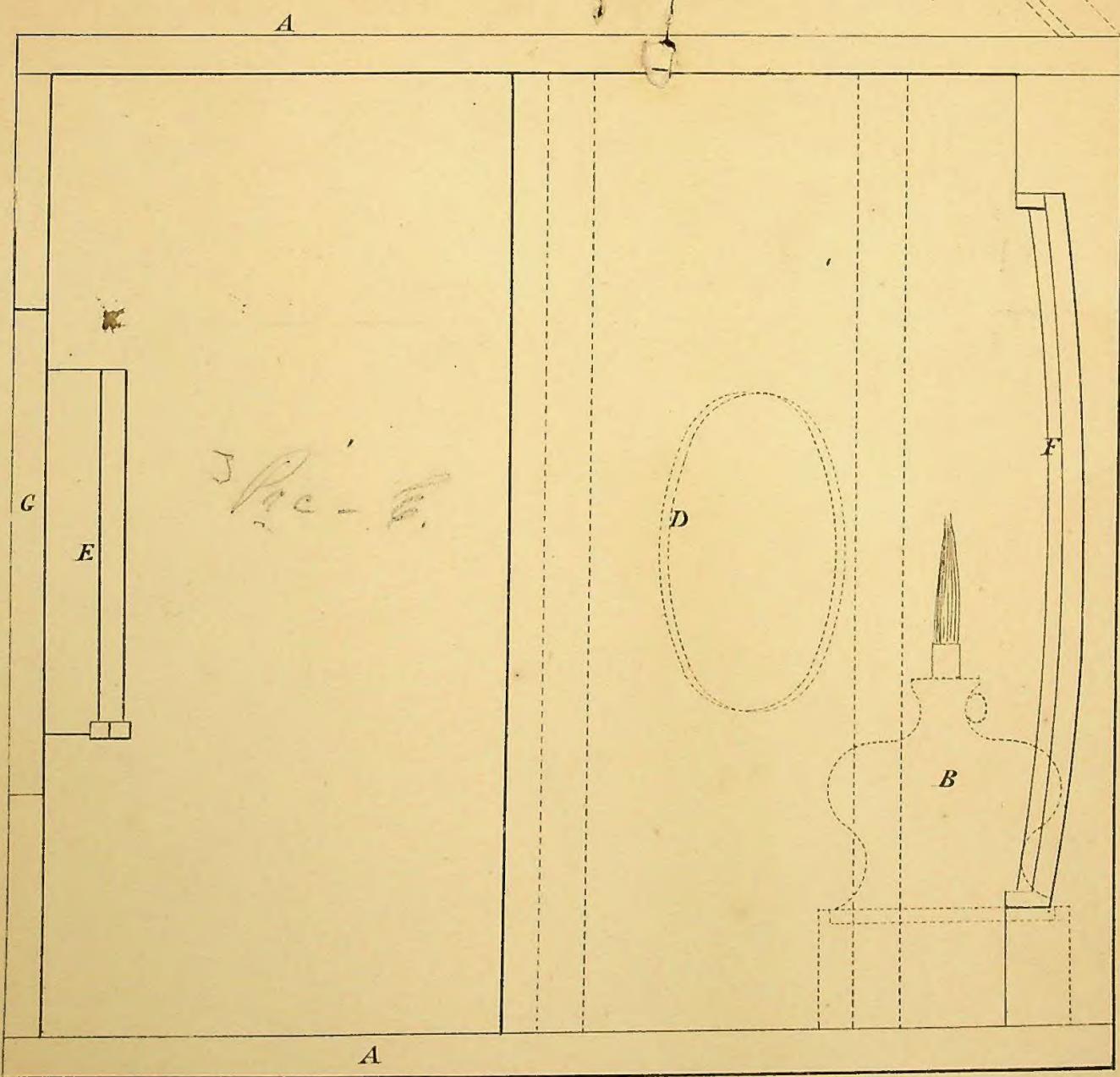


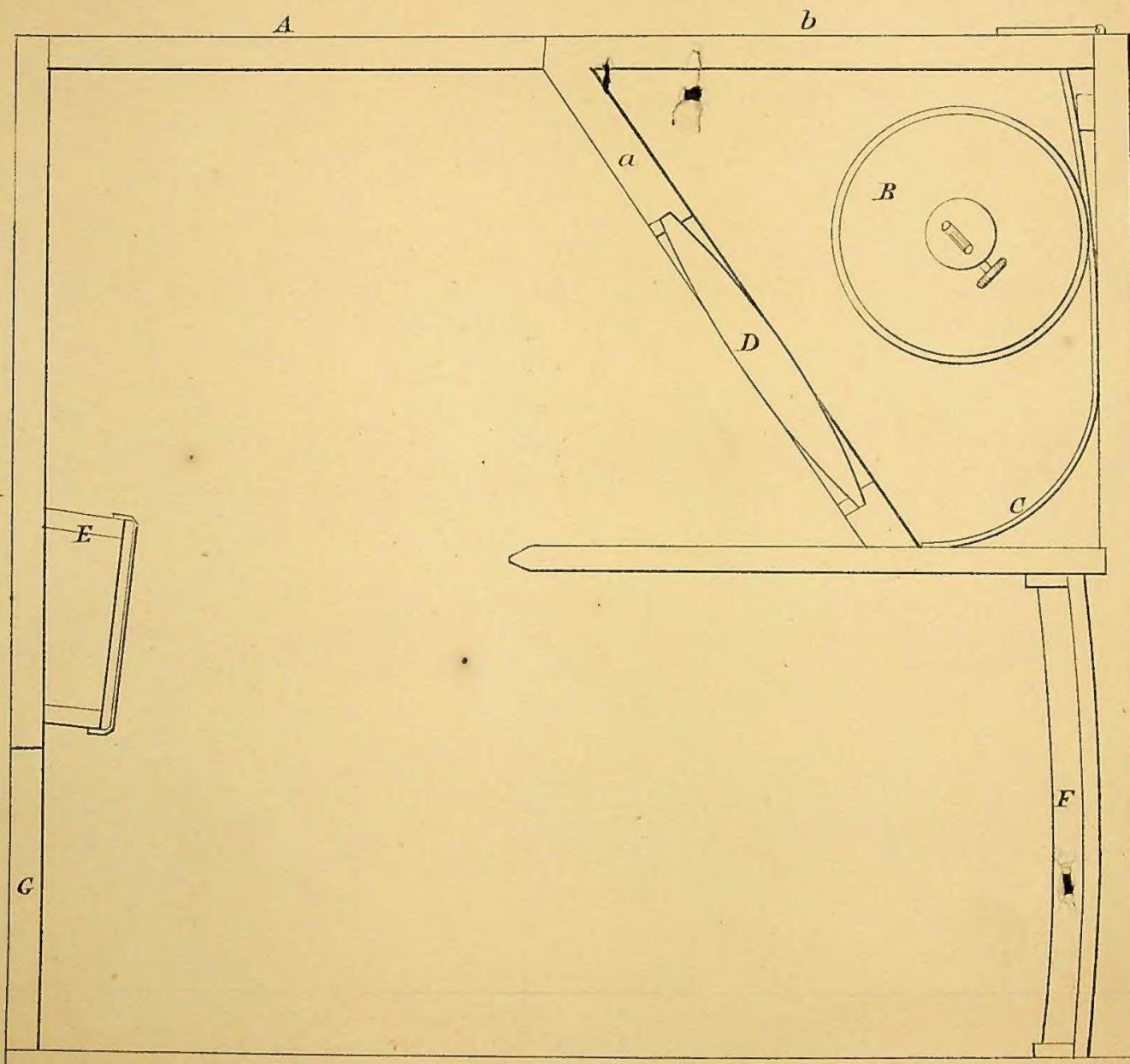
FIG. I.

60-1

L. M.
Heath



F I C . 2 .



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UMINE'S SPECIFICATION.

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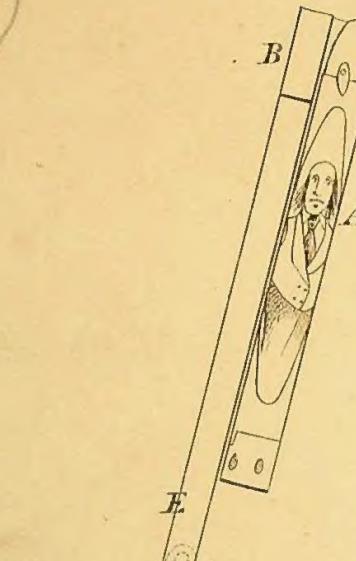
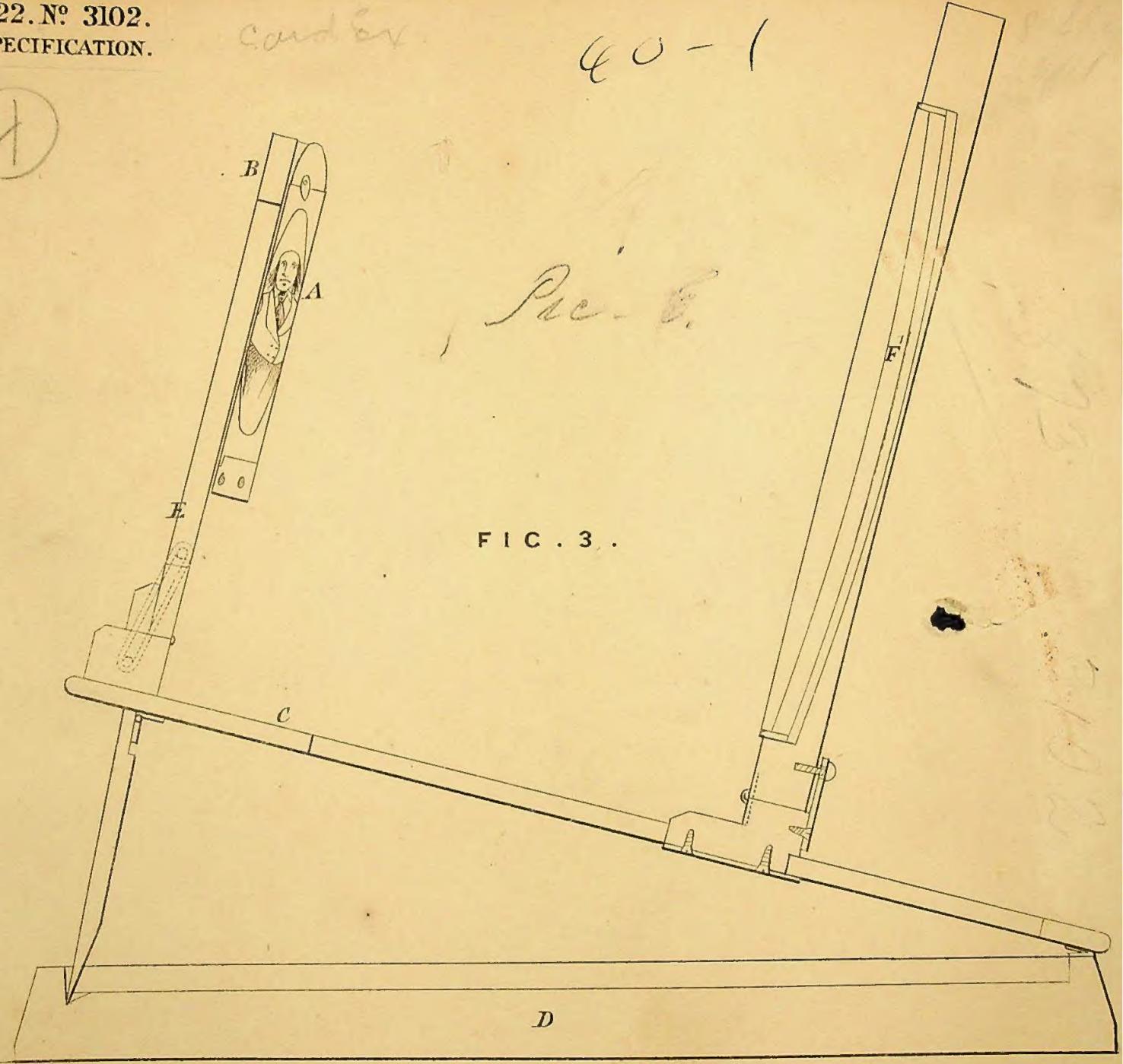
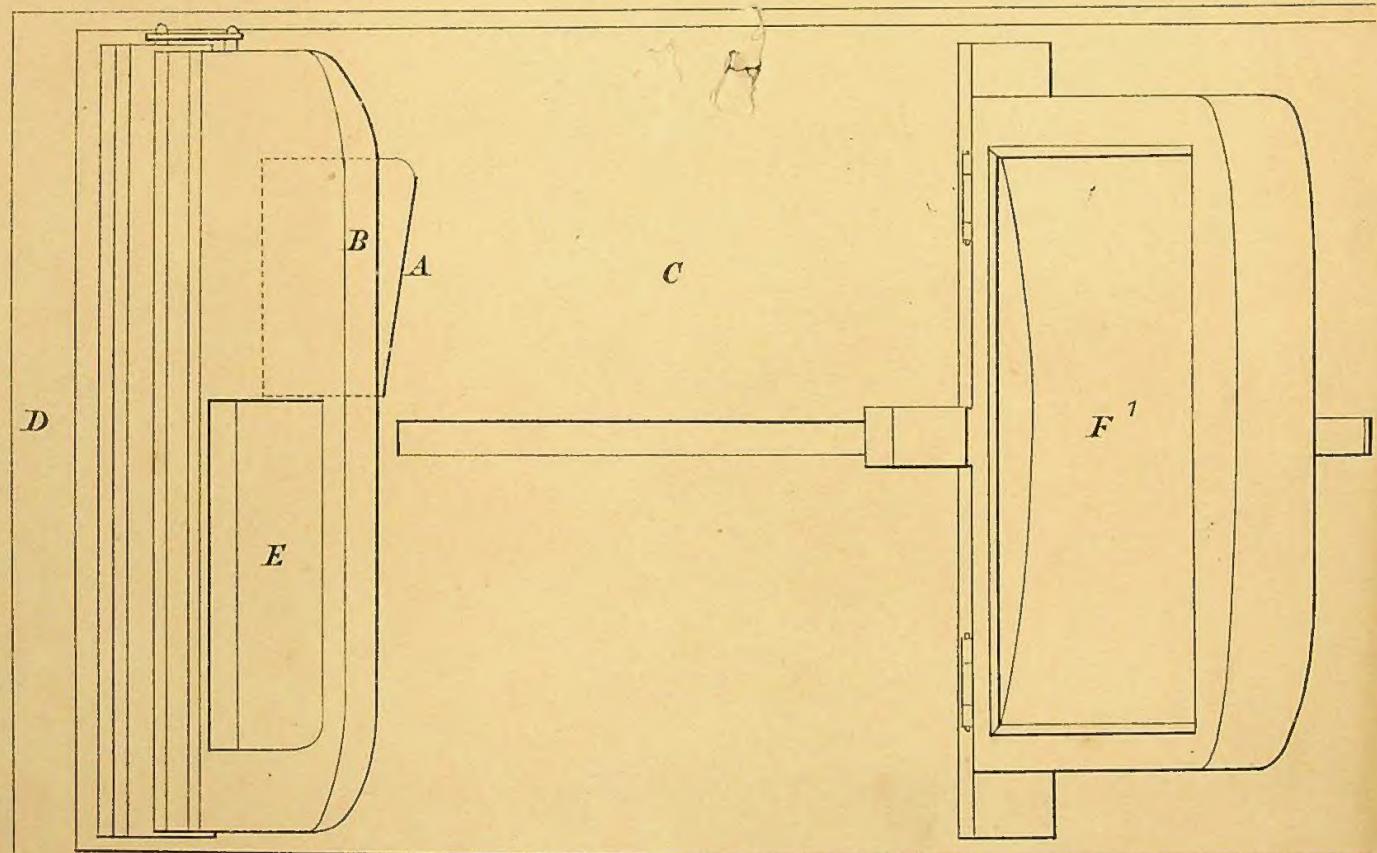


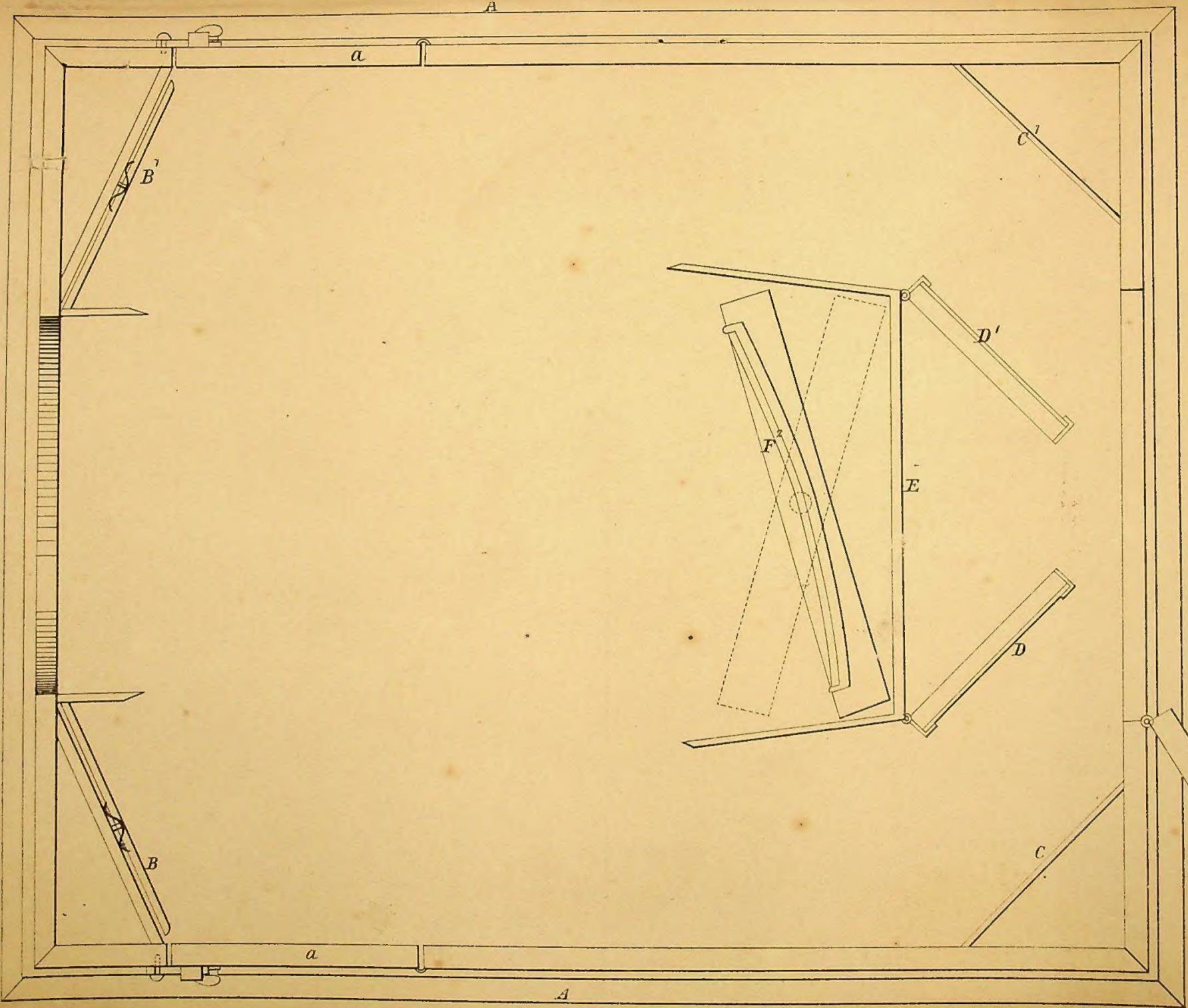
FIG. 3.

Pac. E.



F I C . 4 .





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A.D. 1873 SEP. 22 NO. 3102
CUMMINS



A.D. 1873, 22nd SEPTEMBER. N° 3102.

Exhibiting and Magnifying Photographs, &c.

LETTERS PATENT to James Andrew Cumine, of Belfast, Ireland, Photographer and Optician, for the Invention of " IMPROVEMENTS IN APPARATUS FOR EXHIBITING AND MAGNIFYING PHOTOGRAPHS AND OTHER PICTURES OR OBJECTS."

Sealed the 20th February 1874, and dated the 22nd September 1873.

PROVISIONAL SPECIFICATION left by the said James Andrew Cumine at the Office of the Commissioners of Patents, with his Petition, on the 22nd September 1873.

I, JAMES ANDREW CUMINE, of Belfast, Ireland, Photographer and Optician, do hereby declare the nature of my said Invention for " IMPROVEMENTS IN APPARATUS FOR EXHIBITING AND MAGNIFYING PHOTOGRAPHS AND OTHER PICTURES OR OBJECTS," to be as follows:—

This Invention relates to a peculiar arrangement of apparatus for exhibiting and magnifying photographs and other pictures or objects, whether by the aid of artificial or natural light, and consists, as intended for artificial light, of a box, case, or frame provided with any suitable lamp or gas burner and reflector, and with a lens concentrating the rays

Cumine's Improvements in Exhibiting and Magnifying Photographs, &c.

of light upon the picture or other object to be exhibited. This picture or object is placed in a convenient holder in the said box or frame, so situate as that its image may be reflected by a concave or magnifying mirror also placed in the box or frame opposite the picture.

In front of the said mirror and on the opposite side of the box (if an enclosed box be used) an aperture is left, through which the magnified image of the picture or object is viewed.

When required for use by daylight only a daylight reflector, consisting of polished metal, silvered glass, or other good reflecting medium is so adjusted on the top of the box or frame as to cast the rays of light 10 directly upon the picture or object in lieu of using the lamp or gas burner or lens, as herein-before described. Or if preferred the same apparatus may be fitted with reflectors for artificial or natural light, according as it is intended to be used. Or in some cases the daylight reflector may be dispensed with.

15

SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said James Andrew Cumine in the Great Seal Patent Office on the 21st March 1874.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, JAMES ANDREW CUMINE, of Belfast, Ireland, Photographer and Optician, send 20 greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Twenty-second day of September, in the year of our Lord One thousand eight hundred and seventy-three, in the 37th year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said James Andrew Cumine, Her special license that I, the said James Andrew Cumine, my executors, administrators, and assigns, or such others as I, the said James Andrew Cumine, my executors, administrators, or assigns, should at any time agree with, and no others, from time to time, and at all times thereafter 30 during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for "IMPROVEMENTS IN APPARATUS FOR EXHIBITING AND MAGNIFYING PHOTOGRAPHS

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AND OTHER PICTURES AND OBJECTS," upon the condition (amongst others) that I, the said James Andrew Cumine, my executors or administrators, by an instrument in writing under my hand and seal, should particularly describe and ascertain the nature of the said Invention, and in what manner the 5 same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said Letters Patent.

NOW KNOW YE, that I, the said James Andrew Cumine, do hereby declare the nature of my said Invention, and in what manner the 10 same is to be performed, to be particularly described and ascertained in and by the following statement, reference being had to the accompanying Drawings, and to the letters and figures marked thereon, that is to say :—

This Invention relates to a peculiar arrangement of apparatus for 15 exhibiting and magnifying photographs and other pictures or objects, whether by the aid of artificial or natural light, and consists, as intended for artificial light, of a box, case, or frame provided with any suitable lamp or gas burner and reflector, and with a lens concentrating the rays of light upon the picture or other object to be exhibited. This picture 20 or object is placed in a convenient holder in the said box or frame, so situate as that its image may be reflected by a concave or magnifying mirror also placed in the box or frame opposite the picture.

In front of the said mirror and on the opposite side of the box (if an enclosed box be used) an aperture is left through which the magnified 25 image of the picture or object is viewed.

When required for use by daylight only a daylight reflector consisting of polished metal, silvered glass, or other good reflecting medium is so adjusted on the top of the box or frame as to cast the rays of light directly upon the fixture or object in lieu of using the lamp or gas 30 burner or lens as herein-before described. Or if preferred the same apparatus may be fitted with reflectors for artificial or natural light, according as it is intended to be used. Or in some cases the daylight reflector may be dispensed with.

And in order that the said Invention may be fully understood I shall 35 now proceed more particularly to describe the same, and for that purpose shall refer to the several Figures on the annexed Sheet of

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Drawings, the same letters of reference indicating corresponding parts in all the Figures.

Figure 1, Sheet 1, represents a side sectional elevation of the apparatus embodying my Invention; and Figure 2 a sectional plan of same.

5

A represents a box, case, or frame constructed as shewn, and provided with any suitable lamp or gas burner B, placed through the door b in one corner, and at the back of the box, case, or frame A; C is a reflector of polished metal or other suitable material placed vertically in the corner of the box, case, or frame A immediately behind and partly 10 surrounding the lamp or gas burner B; D is a convex lens fixed in the partition a formed at a suitable angle across the corner of the box, case, or frame A in front of the lamp or gas burner B in such a manner that the rays of light emanating from the latter, and thrown back from the reflector C upon the lens D, are concentrated thereby upon a picture or 15 other object to be exhibited, placed in a frame or holder E formed on the inside of the front of the box, case, or frame A, the light being reflected from the said picture or other object upon a concave or magnifying mirror F placed vertically at the back of the box, case, or frame A, opposite to the picture or other object, and separated by an 20 upright partition from the chamber containing the lamp or gas burner B, as shewn; G is an aperture or opening in the front of the box, case, or frame A, which opening, if desired, may be fitted with a sliding tube, through which the eye of an observer directed towards the concave or magnifying mirror F will see the image of the picture or other object in 25 a magnified form.

If intended only for the use of artificial light the box, case, or frame A is enclosed on all its sides, as shewn, but when required for use by daylight only the top side of the same is partially or entirely open, and is furnished with a movable reflecter H of polished metal, silvered glass, 30 or other good reflector (as seen in dotted lines on Figure 1) so adjustable that the rays of sunlight are reflected from the same directly upon the picture or other object to be viewed in the holder E, and the use of the lamp or gas burner B dispensed with. Or if desirable the box, case, or frame A may be constructed so as to be available both for the use of 35 artificial light and daylight reflectors.

Figure 3, Sheet 2, represents a side sectional elevation of my Inven-

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tion as adapted to or in lieu of graphoscopes; and Figure 4 a plan of same.

In ordinary graphoscopes the picture or other object to be exhibited is placed on a hinged flap or holder, which slides on the upper surface, 5 and at one end of the upper adjustable leaf or portion of the base of the apparatus, for the purpose of adjusting the said picture or other object to the focus of the convex lens through which it is viewed, and which is hinged in one position at the opposite end of the said adjustable portion of the base. According to this form of my Invention however, which I 10 call a "Cuminoscope," the picture or other object is placed on a holder A forming part of the flap or frame B, which is hinged in one position at one end of the adjustable portion C of the base D, and provided with an aperture or opening E, through which the picture is seen in a magnified form on looking towards the concave or magnifying mirror F¹ which is 15 placed in lieu of the ordinary convex lens vertically facing the picture or other object at the opposite end of the adjustable portion C of the base D, and sliding backwards or forwards thereon, as shewn, for the purpose of adjusting the focus of the mirror to the picture or other object.

Another modification of my Invention may be seen in Figure 5, 20 Sheet 3, which is a sectional plan of same, and in which A represents the box, case, or frame having the holders B, B¹, for the pictures or other objects fixed in two adjacent corners formed by the sides and front of the box, case, or frame A, the said pictures or other objects being placed on the holders B, B¹, through doors a, a¹, at the sides, as shewn. 25 C, C¹, are reflectors placed in the two adjacent corners formed by the sides and the back of the box, case, or frame A, and respectively opposite to the holders B, B¹. D, D¹, are adjustable reflectors placed opposite to the reflectors C, C¹, and hinged to an upright partition E, in front of which facing the inside of the front of the box, case, or frame A is placed 30 vertically the concave or magnifying mirror F², which is capable of a rotary adjustment on a centre or pivot, so as to face either of the holders B, B¹, as required. G is an aperture or opening in the front of the box, case, or frame A; and H is a hinged door to an aperture or opening in the back of the same.

35 Supposing a picture or other object to be exhibited is placed on the holder B, and the concave or magnifying mirror F² moved so as to face the latter, the door H is opened, and the reflector D adjusted so as to reflect the light coming through the door H upon the reflector C, which

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will cast it upon the said picture or other object, the latter again reflecting it in such a manner that an observer's eye looking through the aperture or opening G towards the concave or magnifying mirror F² will see the image of the picture or other object in a magnified form. By turning the concave or magnifying mirror F² on its centre or pivot 5 so as to face the holder B¹, and adjusting the reflectors C¹ and D¹ accordingly, a picture or other object placed thereon will be seen in like manner to that on the holder B just described, and so a continuous change or succession of images may be presented to the observer.

Having now described and particularly ascertained the nature of my 10 said Invention, and the manner in which the same is or may be used or carried into effect, I would observe in conclusion that what I consider to be novel and original, and therefore claim as the Invention secured to me by the herein-before in part recited Letters Patent is, the application and use of a concave or magnifying mirror in combination with reflected 15 light, substantially as and for the purposes herein-before described.

In witness whereof, I, the said James Andrew Cumine, have to this my Specification, set my hand and seal, the Nineteenth day of March, One thousand eight hundred and seventy-four.

JAMES ANDREW CUMINE. (L.S.) 20

LONDON:

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